

shell, a variety of the *Planorbis marginatus*, and in the red crag of other places three individuals of an estuary species, *Auricula myosotis*. The same river which conveyed these shells, but especially the *Planorbis*, into the open sea, may also have carried down the carcasses or bones of land animals.

XX.—*On the occurrence of Fossil Quadrumanous, Marsupial, and other Mammalia in the London Clay, near Woodbridge, in Suffolk.* By CHARLES LYELL, Esq., F.R.S., V.P.G.S., &c.

IN the summer of 1838 I was informed by Mr. Wm. Colchester of Ipswich, that he had obtained in the spring of the preceding year, from Kyson (or Kingston), near Woodbridge, in Suffolk, a tooth which he supposed to belong to a mammiferous quadruped, and that it was derived from a bed of sand which he conceived to belong to the London clay formation. In the following year, after having seen the tooth in question and recognized it as decidedly mammiferous, I requested him to take me to the spot, which is situated near the village of Martlesham, on the borders of the estuary of the Deben, about $1\frac{1}{2}$ mile from Woodbridge, and at the distance of about 6 miles from the village of Newbourn mentioned in the preceding notice. I found the deposit at Kyson to consist of brown clay laid open to the depth of 12 feet, and below this sand in layers, yellow and white, which has been pierced to the depth of 12 feet without reaching the bottom. The clay and sand here are dug for making bricks; in the uppermost bed of this sand, precisely at the point where it is in contact with the overlying clay, I found numerous teeth of fishes of the Shark family, similar to others which Mr. Colchester had previously met with associated with the mammalian tooth.

As the clay at Kyson is covered by red crag at a short distance from the pits, and as I had seen clay of the same colour beneath the crag in the neighbouring cliffs of Bawdsey, and also at Felixstow and Harwich, containing *Septaria*, and as at Harwich the imbedded shells, fruits, and bones of Turtle, are such as characterize the London clay, I entertained no doubt that the Kyson formation belonged to the Eocene period.

shell, a variety of the *Planorbis marginatus*, and in the red crag of other places three individuals of an estuary species, *Auricula myosotis*. The same river which conveyed these shells, but especially the *Planorbis*, into the open sea, may also have carried down the carcasses or bones of land animals.

XX.—*On the occurrence of Fossil Quadrumanous, Marsupial, and other Mammalia in the London Clay, near Woodbridge, in Suffolk.* By CHARLES LYELL, Esq., F.R.S., V.P.G.S., &c.

IN the summer of 1838 I was informed by Mr. Wm. Colchester of Ipswich, that he had obtained in the spring of the preceding year, from Kyson (or Kingston), near Woodbridge, in Suffolk, a tooth which he supposed to belong to a mammiferous quadruped, and that it was derived from a bed of sand which he conceived to belong to the London clay formation. In the following year, after having seen the tooth in question and recognized it as decidedly mammiferous, I requested him to take me to the spot, which is situated near the village of Martlesham, on the borders of the estuary of the Deben, about $1\frac{1}{2}$ mile from Woodbridge, and at the distance of about 6 miles from the village of Newbourn mentioned in the preceding notice. I found the deposit at Kyson to consist of brown clay laid open to the depth of 12 feet, and below this sand in layers, yellow and white, which has been pierced to the depth of 12 feet without reaching the bottom. The clay and sand here are dug for making bricks; in the uppermost bed of this sand, precisely at the point where it is in contact with the overlying clay, I found numerous teeth of fishes of the Shark family, similar to others which Mr. Colchester had previously met with associated with the mammalian tooth.

As the clay at Kyson is covered by red crag at a short distance from the pits, and as I had seen clay of the same colour beneath the crag in the neighbouring cliffs of Bawdsey, and also at Felixstow and Harwich, containing *Septaria*, and as at Harwich the imbedded shells, fruits, and bones of Turtle, are such as characterize the London clay, I entertained no doubt that the Kyson formation belonged to the Eocene period.

shell, a variety of the *Planorbis marginatus*, and in the red crag of other places three individuals of an estuary species, *Auricula myosotis*. The same river which conveyed these shells, but especially the *Planorbis*, into the open sea, may also have carried down the carcasses or bones of land animals.

XX.—*On the occurrence of Fossil Quadrumanous, Marsupial, and other Mammalia in the London Clay, near Woodbridge, in Suffolk.* By CHARLES LYELL, Esq., F.R.S., V.P.G.S., &c.

IN the summer of 1838 I was informed by Mr. Wm. Colchester of Ipswich, that he had obtained in the spring of the preceding year, from Kyson (or Kingston), near Woodbridge, in Suffolk, a tooth which he supposed to belong to a mammiferous quadruped, and that it was derived from a bed of sand which he conceived to belong to the London clay formation. In the following year, after having seen the tooth in question and recognized it as decidedly mammiferous, I requested him to take me to the spot, which is situated near the village of Martlesham, on the borders of the estuary of the Deben, about $1\frac{1}{2}$ mile from Woodbridge, and at the distance of about 6 miles from the village of Newbourn mentioned in the preceding notice. I found the deposit at Kyson to consist of brown clay laid open to the depth of 12 feet, and below this sand in layers, yellow and white, which has been pierced to the depth of 12 feet without reaching the bottom. The clay and sand here are dug for making bricks; in the uppermost bed of this sand, precisely at the point where it is in contact with the overlying clay, I found numerous teeth of fishes of the Shark family, similar to others which Mr. Colchester had previously met with associated with the mammalian tooth.

As the clay at Kyson is covered by red crag at a short distance from the pits, and as I had seen clay of the same colour beneath the crag in the neighbouring cliffs of Bawdsey, and also at Felixstow and Harwich, containing *Septaria*, and as at Harwich the imbedded shells, fruits, and bones of Turtle, are such as characterize the London clay, I entertained no doubt that the Kyson formation belonged to the Eocene period.

shell, a variety of the *Planorbis marginatus*, and in the red crag of other places three individuals of an estuary species, *Auricula myosotis*. The same river which conveyed these shells, but especially the *Planorbis*, into the open sea, may also have carried down the carcasses or bones of land animals.

XX.—*On the occurrence of Fossil Quadrumanous, Marsupial, and other Mammalia in the London Clay, near Woodbridge, in Suffolk.* By CHARLES LYELL, Esq., F.R.S., V.P.G.S., &c.

IN the summer of 1838 I was informed by Mr. Wm. Colchester of Ipswich, that he had obtained in the spring of the preceding year, from Kyson (or Kingston), near Woodbridge, in Suffolk, a tooth which he supposed to belong to a mammiferous quadruped, and that it was derived from a bed of sand which he conceived to belong to the London clay formation. In the following year, after having seen the tooth in question and recognized it as decidedly mammiferous, I requested him to take me to the spot, which is situated near the village of Martlesham, on the borders of the estuary of the Deben, about $1\frac{1}{2}$ mile from Woodbridge, and at the distance of about 6 miles from the village of Newbourn mentioned in the preceding notice. I found the deposit at Kyson to consist of brown clay laid open to the depth of 12 feet, and below this sand in layers, yellow and white, which has been pierced to the depth of 12 feet without reaching the bottom. The clay and sand here are dug for making bricks; in the uppermost bed of this sand, precisely at the point where it is in contact with the overlying clay, I found numerous teeth of fishes of the Shark family, similar to others which Mr. Colchester had previously met with associated with the mammalian tooth.

As the clay at Kyson is covered by red crag at a short distance from the pits, and as I had seen clay of the same colour beneath the crag in the neighbouring cliffs of Bawdsey, and also at Felixstow and Harwich, containing *Septaria*, and as at Harwich the imbedded shells, fruits, and bones of Turtle, are such as characterize the London clay, I entertained no doubt that the Kyson formation belonged to the Eocene period.

On showing the fossil tooth to Mr. Owen, he at once affirmed that it was the grinder of some one of the mixed feeders, rather than either a purely carnivorous or herbivorous quadruped. His first comparison led him to suppose that it was one of the molars of the lower jaw of an Opossum, about the size of the *Didelphys virginiana* of North America, to which it in fact bears so great an affinity that it is only distinguishable when we observe with care the more quadrangular form of the molars of the quadrumanes as contrasted with those of the Opossums, in which the anterior and external angle of the grinder is cut off as it were vertically.

When subsequently Mr. Owen instituted a more minute and extensive comparison, with a view of giving an anatomical description of the tooth above-mentioned, he discovered clearly that it was not a *Didelphys*, but the molar of a Monkey of the genus *Macacus*, thus constituting at once the first terrestrial mammifer which had been found in the London clay, and the first quadrumanous animal hitherto discovered in any country in tertiary strata as old as the Eocene period.

Soon after my visit to Kyson, Mr. Searles Wood, having learnt from me that Mr. Owen had determined the tooth above-mentioned to be mammiferous, visited the spot, and prevailed on Mr. Colchester to search in the sand previously thrown aside from the bed containing the numerous teeth of fish. The result of his examination was the discovery of a lower jaw, referred by Mr. Owen to the genus *Macacus*, containing one molar tooth and the alveolus of another*.

Pursuing his researches Mr. Colchester afterwards met with another jaw, which is figured in the subjoined notice (see figs. 2 a, 2 b, 2 c, pp. 192, 193), which Mr. Charlesworth has since described as the jaw of an Opossum †, a genus to which it will be seen that Mr. Owen also considers it to be in all probability allied. Lastly, in September, 1839, two grinders referred by Mr. Owen to insectivorous bats were also obtained by Mr. Colchester from the same pit at Kyson. (See fig. 3. p. 194.)

* See papers by Messrs. Wood and Owen, Mag. of Nat. Hist., Sept. 1839.

† *Ibid.* p. 450.

On showing the fossil tooth to Mr. Owen, he at once affirmed that it was the grinder of some one of the mixed feeders, rather than either a purely carnivorous or herbivorous quadruped. His first comparison led him to suppose that it was one of the molars of the lower jaw of an Opossum, about the size of the *Didelphys virginiana* of North America, to which it in fact bears so great an affinity that it is only distinguishable when we observe with care the more quadrangular form of the molars of the quadrumanes as contrasted with those of the Opossums, in which the anterior and external angle of the grinder is cut off as it were vertically.

When subsequently Mr. Owen instituted a more minute and extensive comparison, with a view of giving an anatomical description of the tooth above-mentioned, he discovered clearly that it was not a *Didelphys*, but the molar of a Monkey of the genus *Macacus*, thus constituting at once the first terrestrial mammifer which had been found in the London clay, and the first quadrumanous animal hitherto discovered in any country in tertiary strata as old as the Eocene period.

Soon after my visit to Kyson, Mr. Searles Wood, having learnt from me that Mr. Owen had determined the tooth above-mentioned to be mammiferous, visited the spot, and prevailed on Mr. Colchester to search in the sand previously thrown aside from the bed containing the numerous teeth of fish. The result of his examination was the discovery of a lower jaw, referred by Mr. Owen to the genus *Macacus*, containing one molar tooth and the alveolus of another*.

Pursuing his researches Mr. Colchester afterwards met with another jaw, which is figured in the subjoined notice (see figs. 2 a, 2 b, 2 c, pp. 192, 193), which Mr. Charlesworth has since described as the jaw of an Opossum †, a genus to which it will be seen that Mr. Owen also considers it to be in all probability allied. Lastly, in September, 1839, two grinders referred by Mr. Owen to insectivorous bats were also obtained by Mr. Colchester from the same pit at Kyson. (See fig. 3. p. 194.)

* See papers by Messrs. Wood and Owen, Mag. of Nat. Hist., Sept. 1839.

† *Ibid.* p. 450.

On showing the fossil tooth to Mr. Owen, he at once affirmed that it was the grinder of some one of the mixed feeders, rather than either a purely carnivorous or herbivorous quadruped. His first comparison led him to suppose that it was one of the molars of the lower jaw of an Opossum, about the size of the *Didelphys virginiana* of North America, to which it in fact bears so great an affinity that it is only distinguishable when we observe with care the more quadrangular form of the molars of the quadrumanes as contrasted with those of the Opossums, in which the anterior and external angle of the grinder is cut off as it were vertically.

When subsequently Mr. Owen instituted a more minute and extensive comparison, with a view of giving an anatomical description of the tooth above-mentioned, he discovered clearly that it was not a *Didelphys*, but the molar of a Monkey of the genus *Macacus*, thus constituting at once the first terrestrial mammifer which had been found in the London clay, and the first quadrumanous animal hitherto discovered in any country in tertiary strata as old as the Eocene period.

Soon after my visit to Kyson, Mr. Searles Wood, having learnt from me that Mr. Owen had determined the tooth above-mentioned to be mammiferous, visited the spot, and prevailed on Mr. Colchester to search in the sand previously thrown aside from the bed containing the numerous teeth of fish. The result of his examination was the discovery of a lower jaw, referred by Mr. Owen to the genus *Macacus*, containing one molar tooth and the alveolus of another*.

Pursuing his researches Mr. Colchester afterwards met with another jaw, which is figured in the subjoined notice (see figs. 2 a, 2 b, 2 c, pp. 192, 193), which Mr. Charlesworth has since described as the jaw of an Opossum †, a genus to which it will be seen that Mr. Owen also considers it to be in all probability allied. Lastly, in September, 1839, two grinders referred by Mr. Owen to insectivorous bats were also obtained by Mr. Colchester from the same pit at Kyson. (See fig. 3. p. 194.)

* See papers by Messrs. Wood and Owen, Mag. of Nat. Hist., Sept. 1839.

† *Ibid.* p. 450.

On showing the fossil tooth to Mr. Owen, he at once affirmed that it was the grinder of some one of the mixed feeders, rather than either a purely carnivorous or herbivorous quadruped. His first comparison led him to suppose that it was one of the molars of the lower jaw of an Opossum, about the size of the *Didelphys virginiana* of North America, to which it in fact bears so great an affinity that it is only distinguishable when we observe with care the more quadrangular form of the molars of the quadrumanes as contrasted with those of the Opossums, in which the anterior and external angle of the grinder is cut off as it were vertically.

When subsequently Mr. Owen instituted a more minute and extensive comparison, with a view of giving an anatomical description of the tooth above-mentioned, he discovered clearly that it was not a *Didelphys*, but the molar of a Monkey of the genus *Macacus*, thus constituting at once the first terrestrial mammifer which had been found in the London clay, and the first quadrumanous animal hitherto discovered in any country in tertiary strata as old as the Eocene period.

Soon after my visit to Kyson, Mr. Searles Wood, having learnt from me that Mr. Owen had determined the tooth above-mentioned to be mammiferous, visited the spot, and prevailed on Mr. Colchester to search in the sand previously thrown aside from the bed containing the numerous teeth of fish. The result of his examination was the discovery of a lower jaw, referred by Mr. Owen to the genus *Macacus*, containing one molar tooth and the alveolus of another*.

Pursuing his researches Mr. Colchester afterwards met with another jaw, which is figured in the subjoined notice (see figs. 2 a, 2 b, 2 c, pp. 192, 193), which Mr. Charlesworth has since described as the jaw of an Opossum †, a genus to which it will be seen that Mr. Owen also considers it to be in all probability allied. Lastly, in September, 1839, two grinders referred by Mr. Owen to insectivorous bats were also obtained by Mr. Colchester from the same pit at Kyson. (See fig. 3. p. 194.)

* See papers by Messrs. Wood and Owen, Mag. of Nat. Hist., Sept. 1839.

† *Ibid.* p. 450.